FlyBy Math™ Alignment
Delaware Mathematics Content Standards

Standard #1: Solve Problems

Students will develop their ability to SOLVE PROBLEMS by engaging in developmentally appropriate problem-solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts; to formulate their own problems; to find solutions to problems from everyday situations; to develop and apply strategies to solve a wide variety of problems; and to integrate mathematical reasoning, communication and connections.

Performance Indicators	***FlyBy Math*™ Activities**
1.03 formulate problems from everyday and mathematical situations;	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.
1.04 develop and apply strategies to solve problems;	--Use tables, graphs, and equations to solve aircraft conflict problems.
1.05 interpret results with respect to the original problem;	--Predict outcomes and explain results of mathematical models and experiments.
1.06 generalize strategies and solutions to new problem situations.	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.

Standard #2: Communicate Mathematically

Students will develop their ability to COMMUNICATE MATHEMATICALLY by solving problems in which there is a need to obtain information from the real world through reading, listening and observing; to translate this information into mathematical language and symbols; to process this information mathematically; and to present results in written, oral and visual formats.

Performance Indicators	***FlyBy Math*™ Activities**
2.01 model real-world situations using oral, written, concrete, pictorial, graphical and algebraic methods;	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
2.03 use mathematical notation and language to describe and discuss real-world situations;	--Predict outcomes and explain results of mathematical models and experiments.

Standard #3: Reason Mathematically

Students will develop their ability to REASON MATHEMATICALLY by solving problems in which there is a need to investigate significant mathematical ideas in all content areas; to justify their thinking; to reinforce and extend their logical reasoning abilities; to reflect on and clarify their own thinking; to ask questions to extend their thinking; and to construct their own learning.

Performance Indicators	***FlyBy Math*™ Activities**
3.02 draw and then justify conclusions;	--Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions. --Explain and justify solutions regarding the motion of

	two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.
3.04 use properties, models, known facts, and relationships to explain and defend their thinking.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Standard #4: Mathematical Connections

Students will develop their ability to make MATHEMATICAL CONNECTIONS by solving problems in which there is a need to view mathematics as an integrated whole and to integrate mathematics with other disciplines, while allowing the flexibility to approach problems, from within and outside mathematics, in a variety of ways.

Performance Indicators	***FlyBy Math™* Activities**
4.02 integrate mathematical problem-solving with other curricular areas;	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.
4.04 use various representations of the same concept;	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
4.06 determine the reasonableness of a mathematical solution as it applies in a real-world situation.	--Predict outcomes and explain results of mathematical models and experiments. --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Standard #5: Estimation, Measurement and Computation

Students will develop an understanding of ESTIMATION, MEASUREMENT, and COMPUTATION by solving problems in which there is a need to measure to a required degree of accuracy by selecting appropriate tools and units; to develop computing strategies and select appropriate methods of calculation from among mental math, paper and pencil, calculators or computers; to use estimating skills to approximate an answer and to determine the reasonableness of results.

Performance Indicators	***FlyBy Math™* Activities**
5.96 estimate and calculate derived measures;	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. --Predict outcomes and explain results of mathematical models and experiments.

Standard #7: Algebra

Students will develop an understanding of ALGEBRA by solving problems in which there is a need to progress from the concrete to the abstract using physical models, equations and graphs; to generalize number patterns; and to describe, represent and analyze relationships among variable quantities.

Performance Indicators	***FlyBy Math™* Activities**
7.90 model relationships among quantities using symbols and expressions;	--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.
7.92 use tables and graphs to interpret expressions, equations and inequalities;	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
7.93 describe relationships between variable quantities verbally, symbolically and graphically (including slope as a rate of change);	--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. --Interpret the slope of a line in the context of a distance-rate-time problem.
7.94 translate and make connections from narrative to table, graph and function;	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system.
7.95 solve linear and quadratic algebraic problems using graphs, tables, equations, formulas and matrices;	--Use tables, graphs, and equations to solve aircraft conflict problems.
7.96 solve systems of equations algebraically, graphically and with matrices;	--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system.

Standard #10: Patterns, Relationships and Functions

Students will develop an understanding of PATTERNS, RELATIONSHIPS AND FUNCTIONS by solving problems in which there is a need to recognize and extend a variety of patterns; and to analyze, represent, model and describe real-world functional relationships.

Performance Indicators	***FlyBy Math™* Activities**
10.90 model real-world phenomena with appropriate functions;	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.